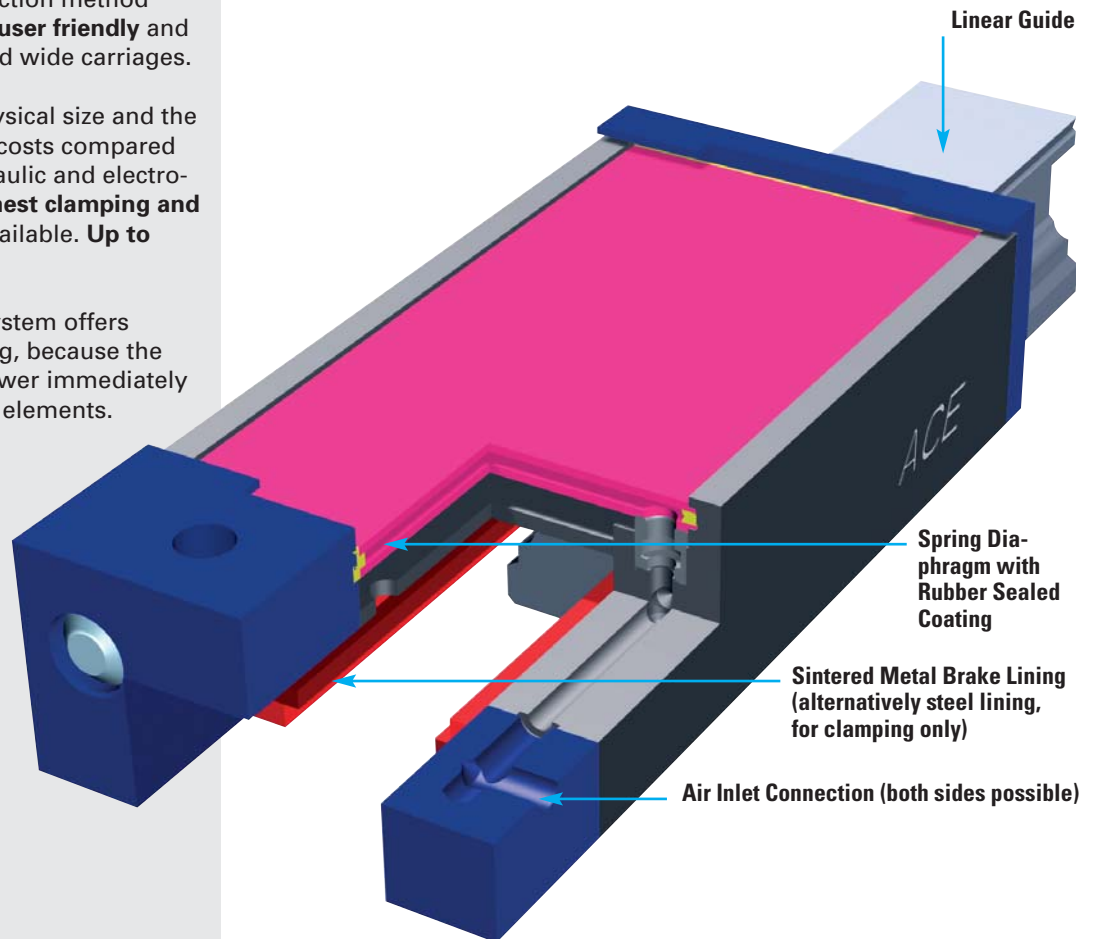


The innovative pneumatic clamping elements of the new **ACE LOCKED series L** offer a safe clamp/or brake system fitted directly on the guided rail. They are suitable for the majority of all rail sizes and manufacturers. For example, **INA, STAR/Rexroth, THK, Schneeberger** and many others are available.

The compact construction method makes the assembly **user friendly** and available for large and wide carriages.

Despite the small physical size and the very low installation costs compared with equivalent hydraulic and electronic solutions the **highest clamping and braking forces** are available. **Up to 10 000 N.**

The ACE clamping system offers optimal safety braking, because the loss of pneumatic power immediately applies the clamping elements.



Rail sizes: 15 to 65 mm

Minimum holding forces: 900 to 10 000 N (6 bar type)

Clamping cycles/emergency use: 100 000/500
(for higher values please consult ACE)

Material: Clamping body and milled parts: tool steel; spring steel plate: spring steel; brake pads: sintered bronze or steel.

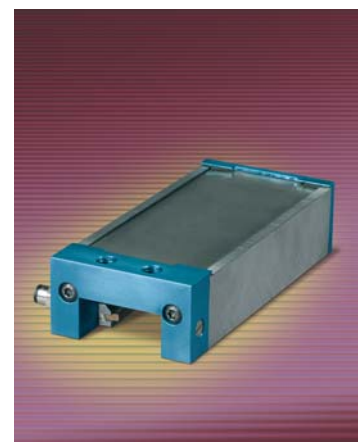
Mounting: In any position.

Operating pressure: 4 bar or 6 bar (standard type)

Pneumatic medium: Dried filtered air.

Operating temperature range: 15 to 45°C

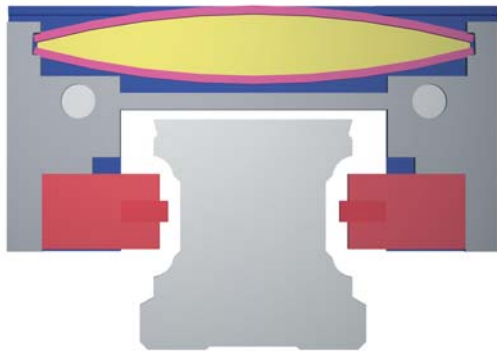
On request: Wipers, special profiles and removing kit.



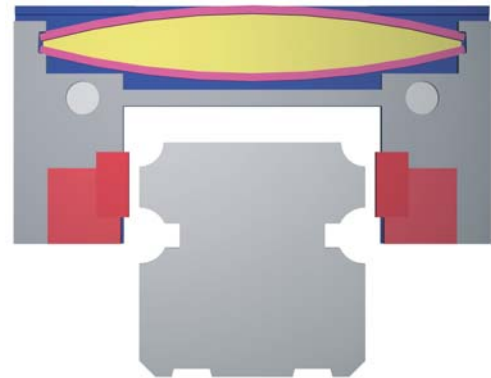
Design and Function

ACE LOCKED-Series Type L Released

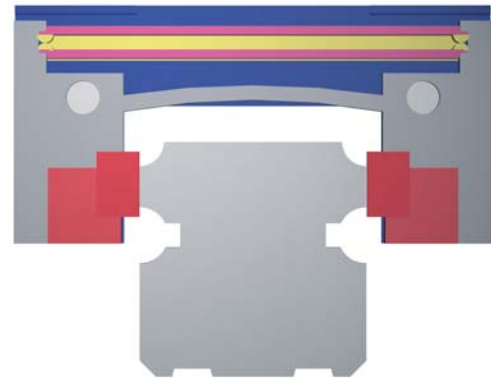
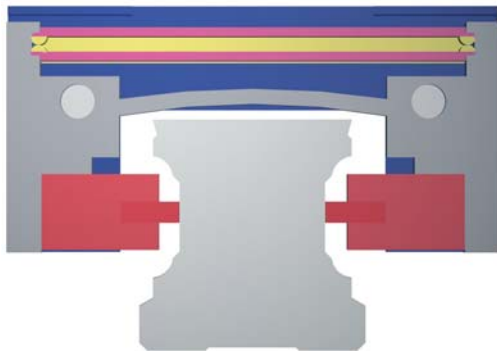
The chamber between the two flexible spring steel diaphragms is filled with compressed air. The spring plates deform and the horizontal dimension shortens. This causes the clamp shoe mounting plates to move away from the rail, releasing the clamps and permitting free movement.



Example: STAR/Rexroth-installation



Example: NSK-installation

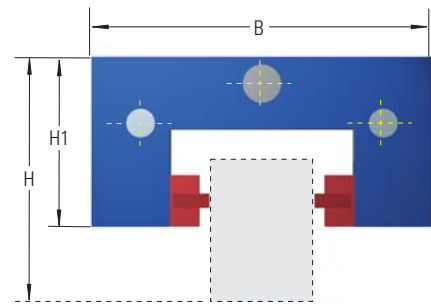
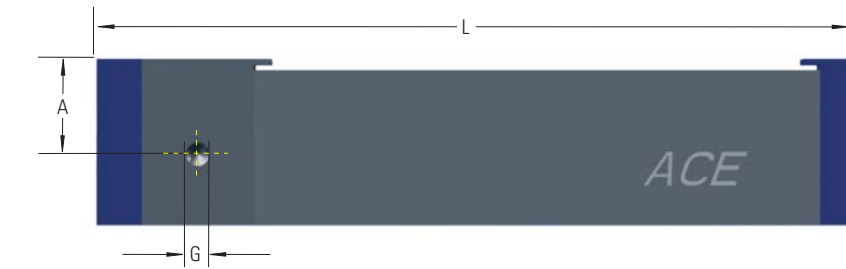


ACE LOCKED-Series Type L Engaged

The compressed air in the chamber between the two flexible spring steel diaphragms is released. The spring plates return to their original position increasing the horizontal dimension. This causes the clamp mounts to move towards the rail, applying the clamping shoe.

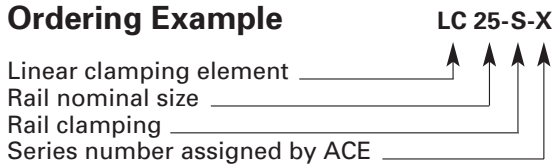
Part Number LC . . .

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Starting with rail size 45, we recommend the use of a second holding block. Prices and dimensions on request.

Ordering Example



Complete Details Required when Ordering:

- Rail manufacturer, rail type, rail size
- Carriage type (height/width)
- Number of clamping cycles per hour
- Operating mode (dry, oiled, greased)
- Name of oil or grease

The calculation and selection of the correct clamping device should be made or approved by ACE. To assist you, please use the request form on page 15. For general information see page 13.

Dimensions and Capacity Chart

Type Part number	L	B	high carriage			low carriage			B1	C	G	M	Holding Force* N	Weight kg
			H	H1	A	H	H1	A						
LC 20-S	97.5	43	30	19.5	13.5	30	19.5	13.5	6	15	M5	M5	900	0.32
LC 25-S	117.5	47	40	29	19.5	36	25	15.5	6	20	M5	M6	1 200	0.50
LC 30-S	126.5	59	45	32.5	20	42	29.5	17	10	24	M5	M8	1 800	0.90
LC 35-S	156.5	69	55	42	29.5	48	35	22.5	10	24	1/8"	M8	2 800	1.26
LC 45-S	176.5	80	70	52	36.5	60	42	26.5	10	26	1/8"	M10	4 000	2.30
LC 55-S	202.5	98	80	59	38	70	49	28	12.5	30	1/8"	M12	6 000	3.90
LC 65-S	259.5	120	100	74	48	90	64	38	15	40	1/4"	M12	10 000	5.00

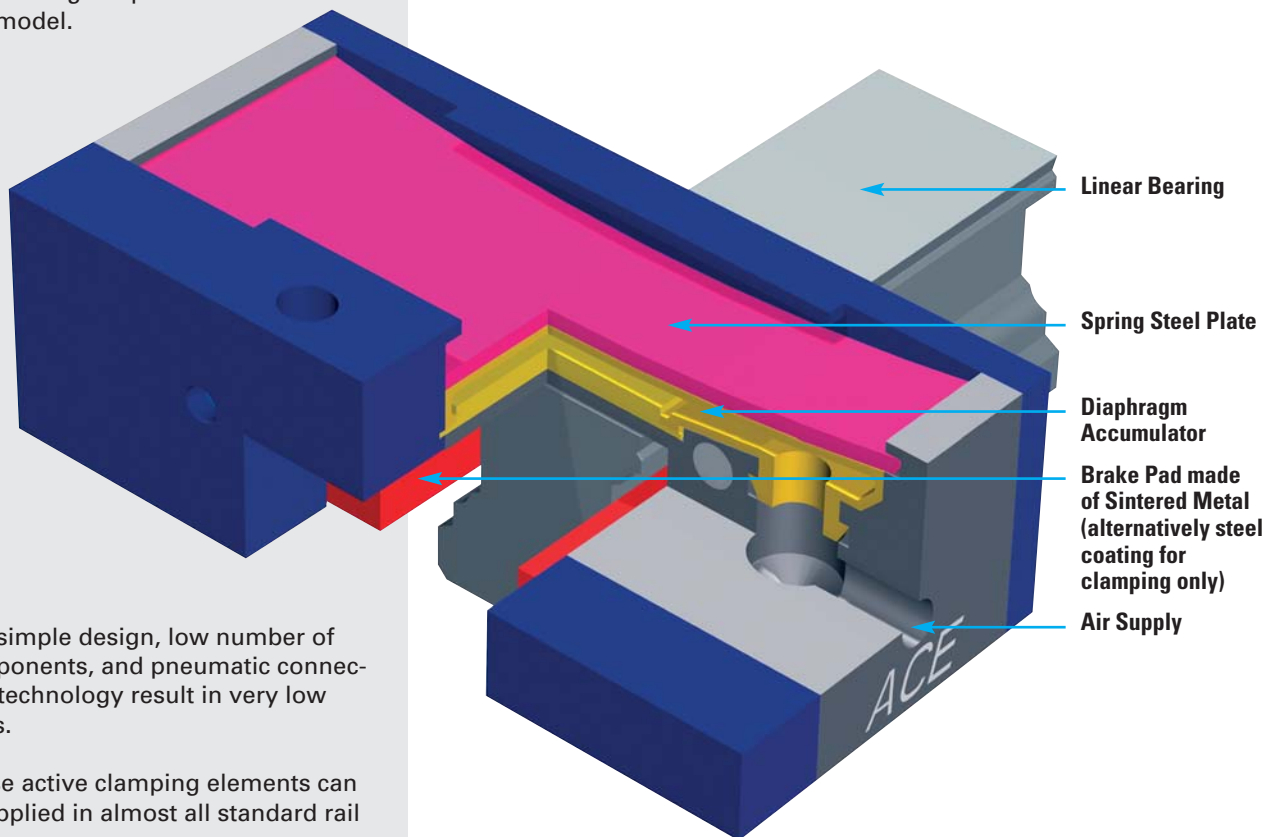
* The holding forces as shown in the capacity chart were determined on dry rails for roller systems. Different holding forces may occur for other rails. Depending on the grease used, calculate with 60% of the indicated holding forces on greased rails. Special pads with full holding forces to clamp (not brake) on greased rails are available. Release of the clamping is actioned by an operating pressure of 5.5 to 6 bar; different operating pressures on request.

These new clamping elements of the **ACE LOCKED Series L Active** offer the highest clamping forces in the most compact design.

Very rapid clamping is possible due reaction free pneumatic operation.

With an installation length of only 40 mm the largest clamping forces are possible, up to 800 N.

The large surface area of the brake ensures a long working life. Both clamping and braking are possible with this model.



The simple design, low number of components, and pneumatic connection technology result in very low costs.

These active clamping elements can be applied in almost all standard rail systems.

Customized special sizes for the wood working and automation industries are offered on request.

Rail sizes: 20, 25 and 35 mm (further sizes planned)

Maximum holding forces: up to 1250 N (6 bar type)

Clamping cycles/emergency use: 100 000/500
(for higher values please consult ACE)

Material: Clamping body and milled parts: tool steel; spring steel plate: spring steel; brake pads: sintered bronze or steel.

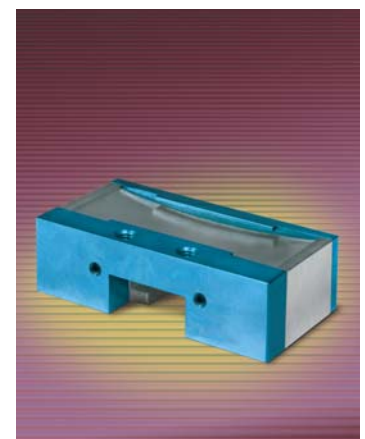
Mounting: In any position.

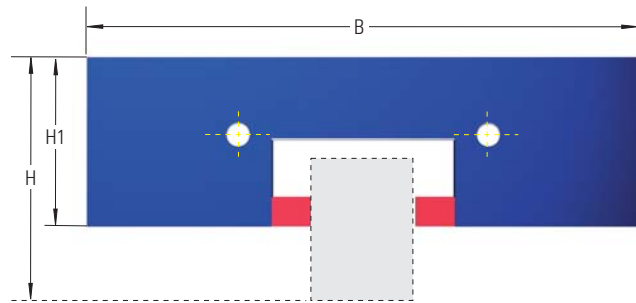
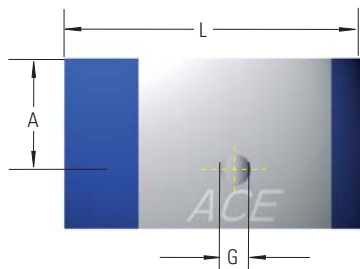
Operating Pressure: 4 bar or 6 bar (standard type)

Pneumatic medium: Dried filtered air.

Operating temperature range: 15 to 45°C

On request: Wipers and special profiles.





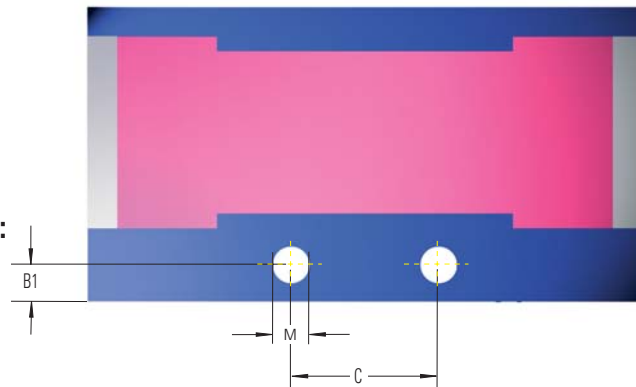
Ordering Example

LC 25-SA-X

Linear clamping element _____
 Rail nominal size _____
 Rail clamping Active _____
 Series number assigned by ACE _____

Complete Details Required when Ordering:

Rail manufacturer, rail type, rail size
 Carriage type (height/width)
 Number of clamping cycles per hour
 Operating mode (dry, oiled, greased)
 Name of oil or grease



Functional Description and Instruction

To **activate the clamping**, the membrane accumulator underneath the spring steel plate is filled with compressed air. The pre-tensioned spring steel plate is pushed upwards and stretched at the same time. The cross bar serves as pivot point and operates against a taper on the lower part of the clamping body. The brake pads are thereby pressed against the rails and the clamping is active.

To **release the clamping**, the membrane accumulator must be depressurized. The spring steel plate snaps back and pushes the clamp body underneath the cross bar. Now the previously elastically deformed clamp body can snap back into its initial position. This removes the tapered body off the cross bar and widens the gap underneath it. The brake pads lift off the rails.

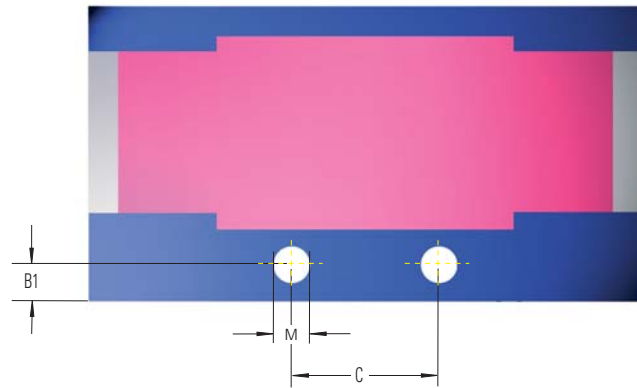
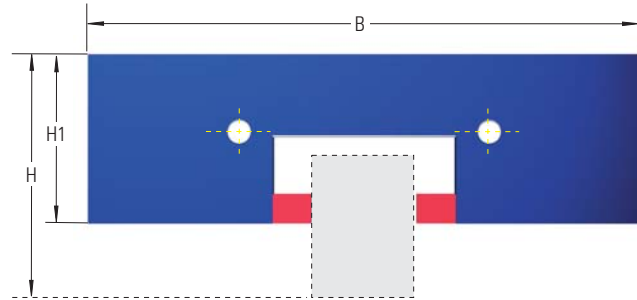
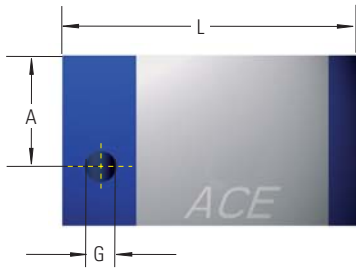
The calculation and selection of the correct clamping device should be made or approved by ACE. To assist you, please use the request form on page 15. For general information see page 13.

Dimensions and Capacity Chart

Type Part number	L	B	low carriage		high carriage		A	B1	C	G	M	Holding Force* N	Weight kg
			H	H1	H	H1							
LC 20-SA	40	75	30	23			15	5	20	M5	M6	650	0.33
LC 25-SA	40	75	36	23	40	27	15	5	20	M5	M6	800	0.35
LC 35-SA	67	96	48	35	55	32	20	8.75	20	G 1/8	M8	1250	0.65

* The holding forces as shown in the capacity chart were determined on dry rails for roller systems (STAR, INA). Different holding forces may occur for other rail systems. Depending on the grease used, calculate with **60% of the indicated holding forces** on greased rails. Special pads with full holding forces for clamping (not braking) on greased rails are available.

Part Number LC . . .



Ordering Example

LC 25-SK-X

Linear clamping element _____
 Rail nominal size _____
 Rail clamping Compact _____
 Series number assigned by ACE _____

Complete Details Required when Ordering:

Rail manufacturer, rail type, rail size
 Carriage type (height/width)
 Number of clamping cycles per hour
 Operating mode (dry, oiled, greased)
 Name of oil or grease

The calculation and selection of the correct clamping device should be made or approved by ACE. To assist you, please use the request form on page 15. For general information see page 13.

Dimensions and Capacity Chart

Type Part number	L	B	low carriage		high carriage		A	B1	C	G	M	Holding Force* N	Weight kg
			H	H1	H	H1							
LC 15-SK	55.5	45	24	20.5	-	-	14	5	15	M5	M4	450	0.50
LC 20-SK	55.5	54	30	25	-	-	16	5	20	M5	M6	650	0.60
LC 25-SK	55.5	75	36	32.5	40	36.5	16	5	20	M5	M6	750	0.70
LC 30-SK	67	82	42	30	45	33	21	8.75	22	M5	M8	1150	0.90
LC 35-SK	67	96	48	40	55	47	20	8.75	24	G1/8	M8	1250	1.27

* The holding forces as shown in the capacity chart were determined on dry rails for roller systems. Different holding forces may occur for other rails. Depending on the grease used, calculate with 60% of the indicated holding forces on greased rails. Special pads with full holding forces to clamp (not brake) on greased rails are available. Release of the clamping is actioned by an operating pressure of 5.5 to 6 bar; different operating pressures on request.

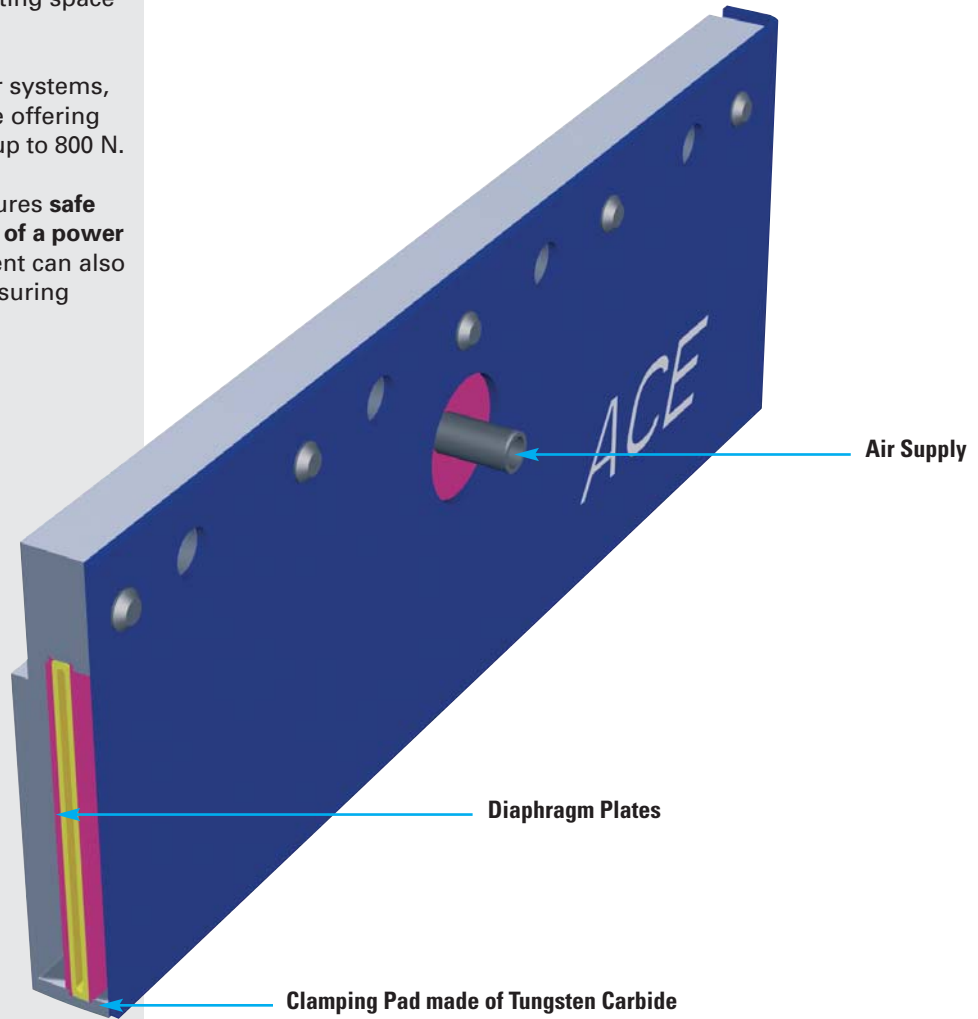
The **extension unit LOCKED-Series L** from ACE enables pneumatic clamping adjacent to the precision rail.

The ACE LOCKED-L extension units are identical for all standard rail manufacturers.

Due to the side mounting at the carriage, the need for mounting space is minimised.

This, in comparison to other systems, is a cost effective alternative offering medium clamping forces of up to 800 N.

A spring-brake actuator assures **safe and secure clamping in case of a power failure**. This clamping element can also be used for rails with a measuring system.



Rail Sizes: 25 and 35 mm (45 mm planned)

Minimum holding forces: up to 800 N

Clamping cycles: 10 000
(for higher values please consult ACE)

Material: Clamp body and milled parts: tool steel; spring steel plate: spring steel; brake pads: sintered bronze or steel.

Mounting: In any position.

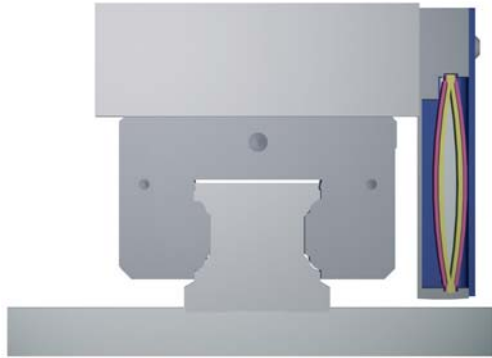
Operating Pressure: 4 bar

Pneumatic medium:
Dried filtered air.

Operating temperature range: 15 to 45°C



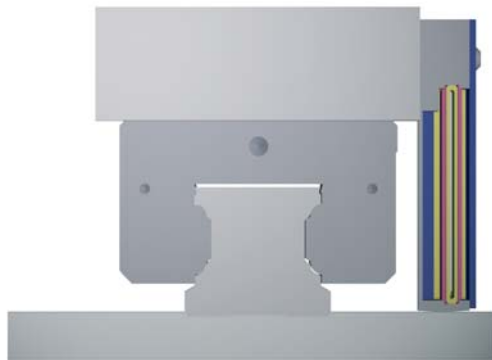
Operational Principle



LOCKED-L Extension Released

The chamber between the two spring-steel diaphragms is filled with compressed air, so that the spring plates are elastically deformed and the whole system contracts. Due to contraction, the brake plate moves upwards and the carriage can move freely.

The space between brake plate and base at 5 bar is approx. 0.05 mm. Due to the accuracy of the precision rails, the distance between carriage and base is very stable, and the space of 0.05 mm is suitable.



LOCKED-L Extension Engaged

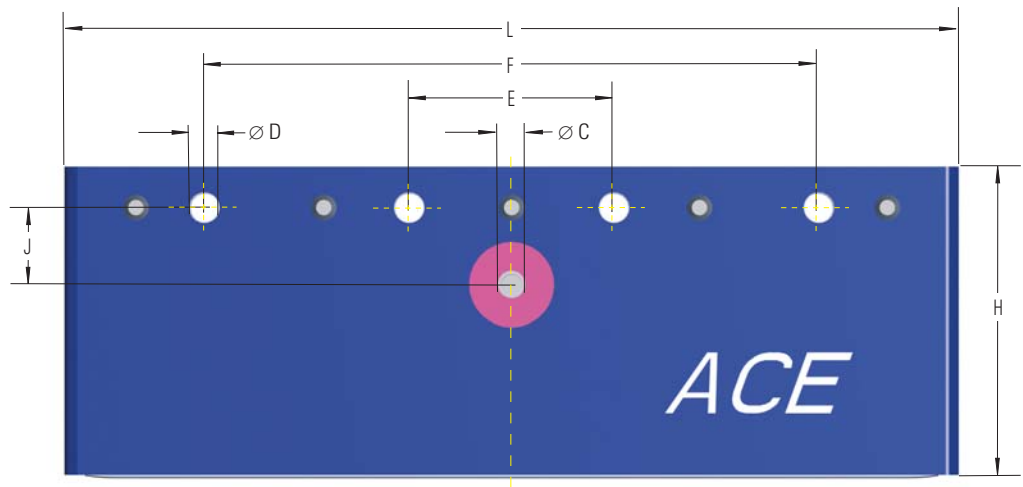
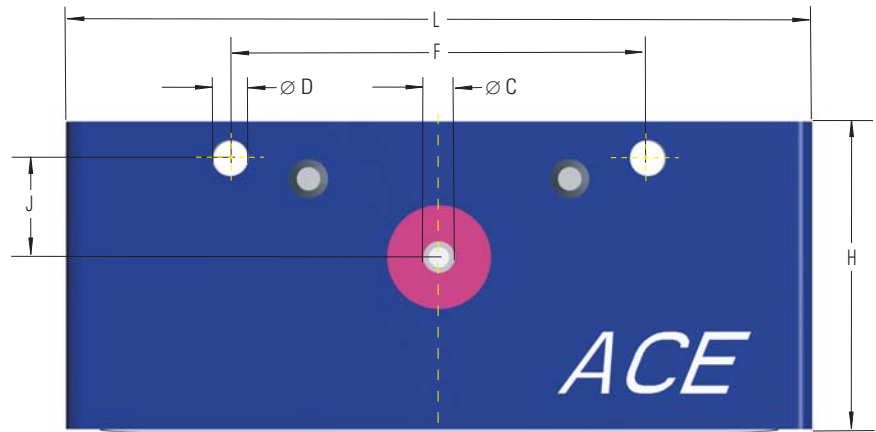
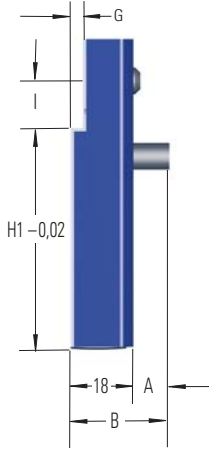
The air pressure in the chamber between the two spring-steel diaphragms is released. The energy accumulated in the spring plates causes an expansion of the brake elements on to the machine base.

When the brake plates contact the base, a large part of the energy is still present in the spring brake actuator. The carriage is clamped tightly.

General Information for ACE LOCKED Series

- Exceeding the permissible operating pressure may lead to damage of the clamping unit.
- Clamping units are not designed to secure floating loads.
- Dirt, oil, and grease on the surface of the brake plates and the system affect the holding forces.
- Clamping elements may only be used according to technical specifications.
- The chosen compressed air is to be maintained throughout the entire service life.
- Regulations of the BG or other controlling institutes as well as technical regulations are to be adhered to.
- Further information can be taken from the **mounting and operating manuals** in the download areas of the ACE Homepage at www.ace-controls.co.uk.

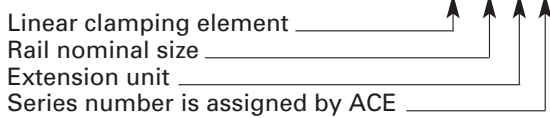
Part Number LC . . .



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Ordering Example

LC 25-A-X



Complete Details Required when Ordering:

- Opening pressure
- Drilling template with drawing, if different
- Rail manufacturer, rail type, rail size
- Carriage type (height/width)

Dimensions and Capacity Chart

Type	L	B	H	H1	A	C	D	E	F	G	I	J	Holding Force* N	Weight kg
LC 25-A	140	28.15	60	36	17	4	6.8		80	3.5	17	19	500	0.55
LC 35-A	212	29.45	81	55	19	8	6.8	50	150	3.5	14	22	800	1.15

* The stated holding forces are dependent on clamping area, and the clamp material pairing and can only be taken as an approximate reference value. Releasing of the clamping takes place at an operating pressure of 4 bar.